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ABSTRACT

Historically, the approach to physical activity for people with disabilities has been couched in medical rationale and focused on rehabilitation. This does not account for physical activity for the joy of it as in play, exercise to improve or maintain fitness, or activity required in employment. The new paradigm of healthy, active lifestyles for people with disabilities is one of inclusion and integration. Today, adapted physical education programs in the schools include games, sports, rhythms, and aquatics suited to the individual needs, capabilities, and limitations of students with disabilities. This paper focuses on the benefits of physical activity and physical fitness for people with disabilities, the challenges to becoming physically active, and the effects of disabilities on health-related fitness components (cardiovascular fitness, muscular strength, flexibility, and body composition). The paper also discusses how communities can promote physical activity and fitness programs for people with disabilities. It examines the move to inclusive education for students with disabilities, and it considers issues related to sports for people with disabilities. A list of pertinent professional organizations is included. (Contains 25 references.) (SM)

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Research Digest

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ED 429 951

Physical Activity and Fitness for Persons with Disabilities

A Paradigm Shift

An article related to fitness and activity for persons with disabilities can give rise to many different questions. Some readers might ask, "What good would it do for people to exercise who are already disabled?" People with disabilities might think, "Exercise will use up my energy before I get the things done I really need to do on a daily basis" or "I'm afraid I could aggravate my condition like making my joints stiff or more painful." Owners of exercise facilities and administrators of public facilities have often surmised, "What if they fall and injure themselves? We may be liable."

Historically, the approach to physical activity for people with disabilities has been couched in medical rationale and focused on rehabilitation. Whereas physical education (physical training) has been a part of school curriculum for nearly 100 years, the original orientation was to supplement what was being done in the medical arena, i.e. rehabilitation. The paradigm was based on the medical model and one of isolation and segregation. Rimmer defines rehabilitation as:

> "the restoration and/or maintenance of physical function, which allows an individual to perform activities of daily living without incurring high levels of stress or fatigue. These activities include but are not limited to, ambulating, dressing and undressing, transferring from a wheelchair to a bed or commode, carrying or lifting common items such as groceries or laundry, reaching for objects above the head, rising from a chair and walking up and down stairs." (1994, p. 2)

This definition of rehabilitation does not account for physical activity for the joy of it as in play, exercise to improve or maintain fitness or activity required in employment. The new paradigm of healthy, active lifestyles for people with disabilities is one of inclusion and integration. Whereas much of what people do in rehabilitation contributes to physical fitness, activities designed and engaged in for the express purpose of improving physical fitness goes well beyond rehabilitation. Today, adapted physical education programs in the schools include games, sports, rhythms and aquatics suited to the individual needs, capacities and limitations of students with disabilities—a welcome change over the medical gymnastics of the turn of the century.

Originally used in 1985 (Casperson and others) and reiterated in 1995 by Pate and colleagues in a recommendation from CDC, physical fitness is "a set of attributes that people have or achieve that relates to the ability to perform physical activity (Pate and others, 1995)." The implication of this definition over others in the past is that it takes into consideration ALL activities of daily living including the physical demands of employment, deliberate structured activity done expressly to maintain or improve fitness, normal ambulation, play, sport and domestic chores. Unlike previous definitions, research findings over the past several decades have modulated the view that to be of value for improving physical fitness, activity had to be vigorous. In fact, *A Report of the Surgeon General: Physical Activity and Health* (1996) brings together findings that indicate that physical activity need not be strenuous to provide health benefits.

Thus, the old paradigm of providing rehabilitation and practice on activities of daily living as the sole sum and substance of physical activity for people with disabilities has been replaced. The model for fitness development today includes play, sport, physical demands of employment involving large and small muscles and daily chores for people with disabilities and able-bodied people alike. Persons with disabilities have demanded this shift and research supports it.

Benefits of Activity/Fitness for People with Disabilities

The statements at the opening of this digest are common misunderstandings held by people on the topic of exercise and fitness for persons with disabilities. The fact of the matter is: *individuals with disabilities, for the most part, can gain very similar benefits from physical activity and the accrued physical fitness as people without disabilities.*

People with disabilities can enhance the functioning and health of their heart, lungs, muscles and bones in most cases through regular physical activity. Flexibility, mobility and coordination can be improved, lessening the negative effects of some conditions or slowing the progression of others. Besides, participation in physical activity can be fun and provide a chance to meet people and make new friends. Since physical activity contributes to the maintenance of health, by exercising, people actually build stamina that makes the demands of daily living easier thus leaving extra energy at the

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end of the day for additional social activities. While there may be some minor discomfort by anyone at the beginning of a physical activity program after being sedentary, there is no evidence that appropriate activity, done correctly will aggravate most conditions. It is important to know how one's body responds to different conditions and to plan activities accordingly.

Some people with disabilities hesitate to be active for fear of falling. Anyone can fall and activity actually improves balance and coordination to the extent that injury is less likely among people who exercise on a daily basis. People or entities who own facilities where activity programs are conducted are no more liable for injuries to people with disabilities than they are for injuries sustained by any other consumer given that the facilities and equipment are properly maintained and appropriate instruction and supervision are provided.

Challenges to Becoming Physically Active

People with disabilities have many challenges impeding their progress that have to be overcome or circumvented. These challenges vary depending on the disability, but here are a few of them:

- Attitudinal and architectural barriers still exist and require a great deal of energy to overcome. Architectural barriers alone require considerably more energy expenditure over that required by people without disabilities for ambulating up ramps or going around the building to an accessible entrance (Miller and others, 1984).
- Most people with disabilities live very sedentary lifestyles and therefore have weight problems and other (secondary) health concerns.
- Inefficient movement patterns and poor body alignment increases the amount of energy required to do normal tasks. Fatigue results from this inefficiency leaving the person too tired for leisure-time activities, reduces job efficiency and decreases the overall quality of life (Shephard, 1990).
- Mechanical efficiency and energy levels are negatively effected by: reduced sensory input as in deafness and blindness, spasticity and abnormal reflex activity, use of prostheses and aids like crutches and by loss of functional muscle mass as occurs in paralysis (Skrotsky, 1983; Kobberling and others, 1989; Fischer & Gullickson, 1978; and Wells & Hooker, 1990).
- Depression often accompanies a disability from accident or disease, but can be ameliorated by regular physical activity (ACSM, 1995).
- People with learning disabilities and mental retardation are more likely to be employed in jobs requiring physical labor and thus need higher levels of fitness than those in more sedentary job roles (Beasley, 1982).
- Physical appearance is an important element in being socially accepted in an exercise setting for anyone. People with disabilities need to look as good as possible and follow good hygiene practices in order to obtain social acceptance (Sherrill, 1998). Physical activity settings can be very social and "putting the best self forward" is an important goal.

Effects of Disabilities on Health-Related Fitness Components

As mentioned earlier, people with disabilities can attain health benefits from exercise in much the same way as people without disabilities. There are individual considerations that must be made relative to some specific conditions, but in general—everyone can improve his/her level of fitness.

Cardiovascular Fitness

The ability to sustain prolonged activity that elevates the heart rate and benefits the heart and lungs is different for everyone. The previous statement is the definition of aerobic capacity, sometimes called cardiorespiratory endurance. Ordinarily, the benefits of increased aerobic activity include decreased resting heart rate, decreased resting blood pressure, more efficient heart function, improved circulation, increased muscular endurance, increased bone density and mass, increased elasticity of the skin and decreased % of body fat with a parallel increase in lean tissue. People with cardiovascular disease may not experience some of the responses described above because of the medication they take keeping blood pressure and cardiac functioning controlled. Impaired circulation as seen in people with diabetes may not improve as dramatically as in people without diabetes. Individuals with brittle bone disease (osteogenesis imperfecta) may not be able to exercise vigorously using any high impact activity such as jogging to gain the health benefit of increased bone mass, due to the fragility of the bones under stress. Swimming or cycling, however, may be possibilities for use by these people. In all cases, a physician should be consulted regarding the intensity and frequency of exercise and the effects one can expect based on the condition.

The Surgeon General of the United States (1996) has reported that adults should exercise 20-30 minutes most days, but at least three days each week. The modification of that recommendation for children is 30-60 minutes in developmentally appropriate activity that is meaningful for the child (COPEC, 1998). Remember, all types of physical activity can be considered, so even if done in shorter sessions such as wheeling the wheelchair down to the corner for lunch, transferring from the wheelchair into the car and then playing 20 minutes of wheelchair basketball after work—there will be greater benefits gained than if these lifestyle behaviors were not developed at all.

When heart rate formulas are used to establish appropriate intensity of activity, modifications can be made. Individuals with high level spinal cord injuries should subtract 20-40 beats from 220 before subtracting age to adjust for the changes in the autonomic nervous system from the injury to the spine (Shephard, 1990). Persons with Down syndrome often do not reach their THR due to lack of motivation or understanding of the concepts involved. They may also be limited by lower cardiac output resulting from damaged heart valves. Individuals with prosthetics or progressive neuromuscular disorders such as multiple sclerosis may fatigue easily and thus may not reach the THR. They should be carefully monitored in order to avoid exhaustion. Persons with quadriplegia are unlikely to be able to sustain a maximal heart rate higher than 120-130 bpm because of impairment to the sympathetic nervous system. For these people, rating of perceived exertion (RPE) is the best indicator of intensity of the exercise (Rimmer, 1998). A method used frequently for people with disabilities is RPE—Rating of Perceived Exertion (Borg, 1982). Some people with disabilities and others who cannot meet the heart rate level because of fatigue, difficulty in monitoring HR or restrictions caused by cardiac medication, do better with RPE.

Muscular Strength

The term "muscular strength" is generally accepted to mean increased capacity to move weight and results from muscular development

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Muscular development occurs as a result of using free weights, variable resistance equipment, isokinetics or isometrics. Athletes have been using strength development techniques for years to enhance sport performance. Only recently the summary of health benefits have been brought together through the Surgeon General's Report (1996). Health benefits such as increased physical function, increased independence in daily living activities and fewer medical complications have been documented for older adults and people with disabilities (Stone, 1988). Resistance training additionally contributes to increased heart muscle thickness, decreased resting heart rate, greater stroke volume (amount of blood pumped with each beat), more efficient heart muscle, increased circulation, increased muscle mass (lean body tissue), increased bone density and decreased body fat. Performance benefits include: slower heart rate during activity; increased coordination, accuracy, precision and balance; increased self-esteem; easier performance of activities of daily living (ADL); increased ease of propulsion; decrease or elimination of pressure sores; decreased injury from overuse; greater joint stability and decreased risks of cardiovascular disease.

There are some special considerations for resistance training by people with disabilities. Safety is, of course, a primary factor with anyone using weight training as a form of exercise. It is even more critical for individuals with disabilities who may have poor posture, limited range of motion in joints or problems with joint stability. **All** who lift weights using a barbell should use a spotter. People with problems of joint stability or managing the barbell should definitely use a spotter.

Muscle development should be balanced. Exercise both sides of the joint when using weights. People who use wheelchairs should develop the musculature that counter-balances the anterior muscles used for daily ambulation. Spasticity from cerebral palsy, stroke, a closed head injury or multiple sclerosis can also cause muscle imbalance. Stretch and strengthen the opposing muscles being careful not to increase abnormal muscle tone.

A person's coordination, control and strength should determine whether he or she should use machines or free weights. While machines move in only a predetermined path, they tend to be safer. Free weights can provide a wider range of resistance, since they can be obtained in less than 1 pound up through hundreds, in many increments. They do, however, require balance and control of the weight, a good grip or special gloves to keep the weight in the hand and the availability of equipment in increments that are appropriate for any given person.

Free weights can also be used in different ways such as in gravity-reduced exercise training. This technique, described by Lockette & Keyes (1994), utilizes gravity to reduce the effects of gravity of the weight and exercising limb by doing the exercise in a position in which gravity aids the movement. Another method used with individuals with very limited strength as in multiple sclerosis, is manual resistance. This method, often used in a rehabilitation setting, calls for another person to provide the resistance. It, of course, cannot be calibrated like free weights or a weight machine, but working with the same person all the time is beneficial in that they can tell when they are giving more resistance than previously. Positioning and strapping is also useful for stabilizing the trunk and extremities to assure an aligned, secure and stabile position for performing exercises (Lockette & Keyes, 1994, p. 19). This technique is very useful for persons with amputations who lack the counter-balancing effect of the missing extremities. A wide strap (2"+) should be used so as not to cut the skin . Any sign of skin sensitivity or breakdown should be monitored. Resistance training for individuals with cerebral palsy can be very useful when strengthening the muscles that oppose spasticity. Not only can it increase strength, but the abnormal muscle tone in the spastic muscles can be decreased achieving better balance between the two muscle groups.

Research has shown that for some neuromuscular conditions such as muscular dystrophy, strength training can be beneficial in maintaining strength and cardiorespiratory function if: 1) the degree of weakness is not severe, 2) the rate or progression of the disease is relatively slow, 3) consideration is given to the individual's total daily activity demands and 4) the rate of increasing the intensity of the exercise is slow and supervised (Lockette & Keyes, 1994). Strength training should be approached very cautiously and only after medical consultation for individuals who have conditions that directly effect the muscle. Such conditions are muscular dystrophy, neurological conditions such as multiple sclerosis, polio or other progressive, degenerative diseases that result in gradual loss of muscle mass.

The development of muscular strength is considerably important for individuals who use wheelchairs or other assistive devices. Miller and others (1984) reported that circumventing architectural barriers requires up to 15 times the energy expenditure for persons with disabilities when compared with persons without disabilities. People with mental retardation usually have very poor muscle tone and muscular strength. Furthermore, the work environment for many people with mental retardation is likely to demand greater physical exertion requiring muscular strength.

Flexibility

The ability to move a body part around a joint is one of the most critical elements in keeping people moving independently. As implied earlier, one of the main benefits of flexibility is improved movement proficiency. In addition, flexibility means increased range of motion, reduced muscle soreness, improved posture, reduced musculoskeletal injuries, increased relaxation, reduced neuromuscular tension and controlled spasticity. Being able to tie ones own shoes, reach a plate on a shelf overhead or bend down to pick up a dropped spoon means so much to the independence of every one of us. Exercising for flexibility is an imperative component of any exercise program, especially for those whose disabilities are severe. Joints that do not move, including those in the spine, eventually become rigid and inflexible and the quality of life diminishes measurably.

Stretching and bending exercises are ones that can be done several times a day and should be if one is sedentary. Flexibility exercises should be done at the beginning and ending of any exercise period. The length of the stretch determines the intensity of flexibility exercises. For example, when seated with one leg straight and the other flexed, the stretch is toward the foot of the straight leg. If, at first, only the knee is reached, the reach should be a little closer to the toes with each subsequent attempt until the toes are reached. It may take several weeks. The amount of time to hold the stretch varies with a goal of 10 seconds for warm-up and longer for warm-down. Muscles that are spastic should be stretched for a longer period of time, possibly 20-30 seconds until the muscle is relaxed. If spasms, abnormal muscle tone or nonfunctional primitive reflexes result from either stretching or resistance training, the exercise should be discontinued and re-evaluated.

Caution should be exercised if the condition is one that would be aggravated by stretching. Medical advice should be sought before including stretching exercises in a program to learn how this component can be included and whether or not it should be. Exercise programs should be re-evaluated on a regular basis as one's condition changes. The exercise

program must be geared to the person with disabilities and his or her needs at any point in time, not shaping the person to fit the program (Lockette & Keyes, 1994).

Some special techniques utilized in both rehabilitation and athletics include passive and active range of motion and proprioceptive neuromuscular facilitation (PNF). This technique may be used in instances in which the person is unable to achieve the full range of motion themselves due to contractures or abnormal muscle tone around the joint. These techniques should only be used at the direction of medical personnel and by a trained assistant.

Body Composition

The last element effecting physical fitness is body composition. This is the relationship between lean and fat tissue in the body, usually expressed in terms of percentage of body fat. This is compared with body density that gives a measurement of lean body tissue and bone. Regardless of the way one looks at body composition or the means for measuring it, the goal is to have a balance between body fat and lean tissue to support healthy living as identified in research findings.

Whereas, the desirable thing to do with the other three components of fitness is to increase them, with body fat the goal is often, but not always, to decrease it to healthy levels in people with disabilities. Disadvantages of having excess body fat include greater risk of atherosclerosis, hypertension and increased stress on the heart and lungs. The increased body weight that often accompanies increased body fat also places severe strain on joints, adversely effects posture, decreases self-esteem and can affect interpersonal relationships. These drawbacks of obesity are no different for people with disabilities than for people without disabilities.

While all types of disabilities do not directly affect body composition, some play a significant role in at least influencing if not determining body composition. For example, wheelchair users with paraplegia tend to experience a decrease in lean tissue due to muscular atrophy and an increase in connective tissue, lipids and water (Shephard, 1990). Most research supports the notion that there is an inverse relationship between body fat and the degree of mental retardation for people living in the community. That is, the lower the IQ, the higher the percentage of body fat. This relationship reverses itself, however, for people with severe mental retardation residing in institutions. The body composition of other types of disabilities has been sparsely studied. A Canadian study of blind children found males to be slightly lower in body fat than peers and both sexes slightly lower in lean body mass (Canadian Fitness Survey, 1983). This was quite the opposite of findings in a New Zealand study in which both sexes were found to have twice the subcutaneous body fat as their peers. When testing deaf children ages 10-17, Winnick & Short (1985) found that they had increasing percentages of fat when compared with children who hear, the more hearing loss they had. For both sensory disorders, speculation is that these findings may relate more to social factors such as opportunity to participate, rather than having any direct cause-effect relationship with the disability.

Several techniques for measuring adiposity have been used successfully with populations of people with disabilities. The most popular methods are: underwater weighing, height-weight tables, body mass index and skinfold thickness. The nature of the condition may dictate which technique will be most accurate. For example, individuals with severe contractures from cerebral palsy may not be accurately compared with height-weight tables, but underwater weighing can be used successfully. People with spinal cord injuries may have significant muscle atrophy in the lower extremities, so the site selection for measuring skinfold thickness would be critical with this population. For extremely obese individuals, height-weight tables are recommended since skin fold calipers may not be large enough.

Promoting Physical Activity and Fitness Programs

Every community can provide opportunities for people with disabilities to enjoy the same privileges of activity as other citizens if administrators of recreation and park programs, YMCA and YWCA directors, scout leaders and other civic-minded citizens would simply look around when they themselves are out being active. Are there programs available for participants in wheelchairs? Are families encouraged to bring their children who have disabilities to family programs? Are the environments and facilities designed for activity available and accessible to people with disabilities? Are there safe, accessible and attractive trails for bicycles, pedestrians and wheelchairs?

When a community is planning to develop or modify facilities for activity, people with disabilities should be involved before programs are implemented. No one sees the obstacles to access like someone in a wheelchair who cannot reach the restroom door, get their chair under the drinking fountain or wheel up a grade to reach the outdoor education classroom. Health care providers should also be as supportive of physical activity for individuals with disabilities as they are with anyone else, encouraging them to incorporate regular activity into their daily lives. Most importantly, schools should provide high quality, preferably daily physical education for grades K-12 that is accessible to students with disabilities. This is where children develop their lifestyle behaviors and learn skills that serve them throughout the lifespan.

Moving to Inclusion

In 1975, Public Law 94-142, The Education for All Handicapped Children Act was signed into law. Reauthorized in 1990 and again in 1997 as Part B of PL 101-476, the Individuals with Disabilities Education Act (IDEA), these laws provide free, appropriate public education, including physical education to all students with disabilities through age 21. One aspect of the laws that is most challenging to implement is the concept of "least restrictive environment (LRE)." Through this language (LRE), lawmakers advocated placing students with disabilities into learning environments along with their peers who are without disabilities, to the greatest extent possible. Adults tend to be more assertive than children and thus, have been left to make their own way to be included in work, exercise and other settings.

One of the main barriers for inclusion has been peoples' attitudes. The first recommendation to program personnel for including individuals with disabilities in physical activity, fitness and sport programs is to have a positive attitude. If program leaders do not want to include people with disabilities, if they have negative stereotypes about the performance capabilities or are fearful they will injure the persons with disabilities, the effort will most surely fail. Leaders and teachers should learn as much as they can about persons with disabilities such as:

- their medical and health problems,
- activities they should not do, such as tumbling for individuals with atlanto-axial-instability,
- current level of motor performance and fitness,
- goals or objectives the person has for him or herself,

- goals defined in programs such as individualized educational programs (IEP) or vocational rehabilitation.
- unique learning and communication styles.
- behavioral concerns.
- special interests and strengths of the person.

Activity leaders such as physical educators, recreation personnel, parents, coaches or aides should ask to be involved in helping to plan the goals for a person who wants to learn to be more physically active. Whether in a school setting, worksite program or local fitness center, the best way to include individuals with disabilities is to get to know them well. Learn as much as possible about the person's interests, goals, ABILITIES as well as their disabilities. Include the person with disabilities in the program planning; they have ideas, too, on how to get their needs met.

Use peers to assist the individual with disabilities to the extent needed. This is not to say that another member of the fitness club should spend their entire aerobics class assisting the person with disabilities, but on occasion there may be a need to demonstrate a step, modify a movement or spend extra practice time in order for the routine to be learned. Some individuals with disabilities may not learn as fast as their peers, so expect to spend extra time or enlist peers. In most cases, especially in the schools, if the educator thinks he/she needs extra support to help the student have a meaningful learning experience, then he or she should ask for it and expect to get it. If the student has a trained assistant during other parts of the day and in other classes, and the physical educator believes it would be beneficial to have one in physical education, then an aide should be provided.

Visit other programs the individual is in or similar activity programs. If other professionals are spending time with the individual, find out what techniques work and which do not. Observe the person in another setting if possible to observe the nature of interaction with other program leaders. Try to replicate the successful styles. Be ready to change styles and techniques to accommodate individuals' unique learning needs. Individuals who are mentally retarded, for example, may benefit more from demonstrations, whereas persons who are blind, might profit more from having the teacher "walk them through" the motions or provide instructions in Braille or large print.

There are also professional organizations that may provide advice and recommend professionals in your region who would be willing to assist with problems encountered by people with disabilities trying to access activity programs. There is a listing of such organizations below.

What about Sport?

Certainly sport has become an integral part of the physical activity milieu that has opened up dramatically to people with disabilities in the past 30 years. Evolution of Special Olympics International has gone from a day-camp in the back yard of Eunice Kennedy and Sargent Shriver in 1963 and the first competition in Chicago's Soldier Field in 1968 with 1,000 athletes with mental retardation to similar summer games held in New Haven, Connecticut in 1995 hosting 7,000 athletes. Today over 1 million athletes participate in Special Olympics programs in over 150 countries around the world. In 1988 the International Olympic Committee signed an historic agreement officially recognizing Special Olympics (SOI, 1997).

Many organizations exist that promote sport for people with physical disabilities. The history of most goes back to the International Stoke Mandeville Wheelchair Sports Federation initiating sport for people in wheelchairs as early as World War II. Since that time multiple groups have organized which facilitate sport for people with specific disabilities as well as bringing many disability groups together such as the International Coordinating Committee of the World Sports Organizations for the Disabled (ICC). Although the ICC was in existence a mere 8 years, it accomplished one feat—it got the attention of the International Olympic Committee. In 1985 a meeting with IOC president Juan Antonio Samaranch resulted in the agreement to use the alternate terminology for their games of Paralympics. Surprisingly, the root—*para*—comes from the Latin meaning "attached to" rather than referring to paraplegia. So from that time to the present, the Paralympics have been attached to the Olympic Games and hosted in the same city (DePawu & Gavron, 1995). The names and addresses of a few sport governing organizations are listed below.

Professional Organizations

American Association for Active Lifestyles and Fitness
(ask about a contact in your state)
1900 Association Drive
Reston, VA 20191
(800) 213-7193
http://www.aahperd.org/aaalf/aaalf.html

American College of Sports Medicine
PO Box 1440
Indianapolis, IN 46206-1440
(317) 637-9200
http://www.acsm.org

American Council on Exercise (IDEA)
5820 Oberlin Dr., #102
San Diego, CA 92121
(619) 535-8979
http://www.acefitness.org

American Occupational Therapy Association
4720 Montgomery Lane, PO Box 31220
Bethesda, MD 31220
(301) 652-6611
http://www.aota.org/

American Physical Therapy Association
1111 North Fairfax Street
Alexandria, VA 22314
(703) 706-3201
http://www.apta.org/

American Therapeutic Recreation Association
2308 L Street, NW
Washington, DC 20037-1415
(202) 298-0417
http://www.atra-tr.org/

National Recreation and Parks Association
22377 Belmont Ridge Road
Ashburn, VA 20148-4501
(703) 858-0784
http://www.nrpa.org/

Selected Disability Sport Governing Organizations

President's Council on Physical Fitness and Sport
Hubert Humphrey Building
200 Independence Ave., SW, Room 731H
Washington, DC 20201-0004
http://www.indiana.edu
(for information on fitness testing)

Disabled Sports USA
451 Hungerford Dr., Suite 100
Rockville, MD 20850
http://www.nas.com/~dsusa/

Wheelchair Sports, USA
3595 E. Fountain Boulevard, Suite L-1
Colorado Springs, CO 80910
http://www.wsusa.org/

Special Olympics International
13525 G Street, NW, Suite 500
Washington, DC 20005
http://www.specialolympics.org

United States Cerebral Palsy Athletic Association
200 Harrison Avenue
Newport, RI 02840
http://www.uscpaa.org/

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The President's Council on Physical Fitness and Sports

The President's Council on Physical Fitness and Sports (PCPFS) was established in 1956 through an Executive Order by President Dwight D. Eisenhower as part of a national campaign to help shape up America's younger generation. Today, the PCPFS serves as an advisory council to the President and Secretary of the Department of Health & Human Services on matters involving physical activity, fitness and sports to enhance and improve the health of Americans of all ages.

The PCPFS enlists the active support and assistance of individual citizens, civic groups, private enterprise, and voluntary organizations to promote and improve the physical activity and fitness of all Americans and to inform the public of the important link which exists between regular activity and good health.

Twenty (20) individuals from the sports, fitness and health fields are appointed by the President to serve as members of the Council. They are:

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Don Casey, East Rutherford, NJ
Timothy Finchem, Ponte Vedra Beach, FL
Rockne Freitas, Ed.D., Honolulu, HI
Zina Garrison, Houston, TX
Lee Haney, Fairburne, GA
Jimmie Heuga, Avon, CO
Calvin Hill, Great Falls, VA
Jim Kelly, Buffalo, NY
Judith Pinero Kieffer, Los Angeles, CA
Deborah Slaner Larkin, Pelham, NY
Ira Leesfield, Coral Gables, FL
Albert Mead III, Atlanta, GA
Jack Mills, Columbia, SC
Ellen Hart Pena, Denver, CO
Kevin Saunders, Corpus Christi, TX
Amber Travsky, Laramie, WY
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Physical Activity and Fitness Quote

Individuals with disabilities, for the most part, can gain very similar benefits from physical activity and the accrued physical fitness as people without disabilities.

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American Association for Active Lifestyles and Fitness
(AAHPERD)

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